

Master Thesis

Double Degree



***The impact of Business Angels on the
successfulness of start-ups***

Maastricht University
Universidade Nova de Lisboa

Mircea Valentin Ciocan ° May 2016



Maastricht University

NOVA
School
of Business
& Economics

Shaping
powerful
minds

Master Thesis

The impact of Business Angels on the successfulness of start-ups

Maastricht University

School of Business and Economics

20th of May 2016

Name: Valentin Ciocan (i6003037)

Thesis Supervisor: Dr. Peter Bollen

Master Thesis

Universidade Nova de Lisboa

School of Business and Economics

20th of May 2016

Name: Valentin Ciocan (23385 / 2404)

Thesis Supervisor: Miguel Muñoz Duarte

Master Thesis

Abstract

Founding new companies, often referred to as start-ups, require a substantial amount of money and experience in order to take the right decisions to ensure future growth. The first source of investments (followed by the founder's own resources) are the famous 3 Fs (Friends, Family and Fools) followed by Business Angels (BAs). The latter source turns out to be the most important one for start-ups to ensure their survival during their early company stages. BAs can be defined as *“an individual and wealthy investor, who aims to support young companies by financing them as well as giving strategical recommendations based on their personal experience”*. However, how does a founder know which BA is the right investors for his or her venture? What are the important factors a start-up owner has to look for when searching for the right BA? This thesis investigates experience factors of BAs that tend to be important for young ventures with regard to their successfulness. Therefore, the following research investigates what the important value-adding experience factors a BA has to contribute are. For this purpose, the following research question (RQ) will be answered: *“What are the important value-adding experience factors a business angel has to contribute to a start-up in order to be successful?”* The research makes use of a logistical regression while using a dataset provided by the AIPP-Project by the Kauffman foundation in the US. The results of this thesis show, that the only relevant experience factor of BAs that has an influence on the successfulness of the young company is years of experience within the operating industry of the start-up. All other experience factors investigated (educational background of the BA, number of previously founded companies and the initial amount invested (in US Dollars)) do not have significant impacts on the successfulness of the start-up. Consequently, young founders shall primary choose their respective BAs based on their experiences in the respective industry.

Terminology

AIPP	Angel Investor Performance Project
BA	Business Angel
FMCG	Fast Moving Consumer Goods
IPO	Initial public offer
IVC	Informal Venture Capital
OECD	Organisation for Economic Co-operation and Development
ROI	Return on Investment
VC	Venture Capital

Table of Contents

Abstract	1
Terminology	2
1.0 Introduction	4
1.1 Research Question	6
2.0 Literature Review	8
2.1 External Funding Mechanisms for start-ups	8
2.2 Business Angels and angel groups	11
2.3 Motivation of Business Angels to invest in start-ups and their impacts	14
2.4 Measuring the successfulness of a start-up	16
3.0 Hypothesis development	18
3.1 The relationship between start-up success and the education level of the BA	18
3.2 The relationship between start-up success and the industry experience of the BA	19
3.3 The relationship between start-up success and prior founded companies by the BA	20
3.4 The relationship of the amount invested on the successfulness of start-ups	20
3.5 Theoretical model	21
4.0 Methodology	23
4.1 Research design	23
4.2 Dependent variable	24
4.3 Independent variables	25
5.0 Analysis and Results	28
5.1 Empirical results	28
5.2 Analysis	28
6.0 Discussion and Limitations	32
6.1 Discussion and future research recommendations	32
6.2 Limitations	36
7.0 Conclusion	40
8.0 References	42
9.0 Appendix	47

1.0 Introduction

Nowadays, almost each new company that is founded is called a start-up. Also, most of these start-ups do need external (financial) help in order to survive early business stages as well as to ensure future growth. Finding suitable investors proves to be difficult. Today young founders also have the opportunity to present their ideas on TV shows like “Dragon’s Den” or “Shark Tank”, where investors have the opportunity to invest in companies that they believe will be beneficial for their targets. Those investors have the opportunity to invest solely into the business and wait for their return, or they might as well get involved in the business and help with their knowledge. No matter what engagement form the investors choose, those investors are called Business Angels (BAs). According to Mason and Botelho (2014), a business angel can be described as an individual investing their own funds into new and emerging businesses. Consequently, those individuals have a personal interest in the young start-up to succeed in order to gain a positive return on their investments. Furthermore, not only do they have a personal interest in the start-ups success, they also bring valuable experience and knowledge into the company (Aernoudt, 2005). Yet, the important difference compared to other “normal” investors is that BAs do not only invest money but also invest their own knowledge, time and experience into the venture (Aernoudt, 2005; Aram, 1989). Deakins and Freel (2009) define Business Angels as “private, wealthy individuals who invest their money and experience in small, unquoted entrepreneurial ventures with which they have no family connection”. For the purpose of this thesis, a BA is defined as *“an individual and wealthy investor, who aims to support young companies by financing them as well as giving strategical recommendations based on their personal experience”*

According to the Organisation for Economic Co-operation and Development (OECD) (2011), the BAs capital market is much larger than the traditional venture capital (VC) market.

Furthermore, a study by Avdeitchikova, Landstrom, and Månsson (2008) put emphasis on the importance of BAs as a central funding source. According to their research, BAs are the second largest funding source followed by the 3 F's (Friends, Family, and Fools). This shows that BAs are essential in the growing phase of young companies, ensuring sufficient funds in order to keep their business operations running.

Due to the fact that no formal reporting on BAs is established, one can rely only on estimations of the true size of this market. Numerous studies present different numbers and estimates that vary significantly. According to studies by Landström (1995) and Smith, Smith, and Bliss (2011), BA investments usually start at around \$25'000. Clercq, Fried, Lehtonen, and Sapienza (2006) state that those investments can go up to \$2 million. From this value onwards, VC are more likely to invest their investors' money into start-ups that are likely to create a positive return. Nevertheless, nowadays the internet offers different websites, such as Angellist, where individuals are able to engage as potential BAs for start-ups with investments as small as \$10'000. This contradicts with the studies by Landström (1995) and Smith et al. (2011). Yet, the best-known website "Angellist.com" was only created early 2010 which is the reason why those websites were not included in previous studies (Angellist.com, 2016).

The past and current literature on Business Angels and their relationship to start-up are numerous. However, most literature is based on the perspective of the BA and in which companies' best to invest in. Yet, literature from the perspective of the start-up is in the early stage. Therefore, this thesis focuses on the start-up perspective in order to figure out, which attributes of a BA are most likely to be helpful in their growth phase. For the purpose of this research, experience factors are the attributes that will be elaborated on. In other words: What are the important experience factors of a BA that influence early-stage investments that increase the likelihood to develop a successful start-up?

1.1 Research Question

What makes investments from BAs successful? What are the important factors a BA has to bring into the business, to make it successful? Currently, a lot of literature is based on BAs concerning their financial contribution to those start-ups. However, at present, one can find a research gap on different knowledge and experiences needed in order to ensure a successful investment. To the knowledge of the author, there are no studies available that investigate which experience factors of BAs lead to successful start-ups. According to Knyphausen-Aufseß and Westphal (2008), experience, in general, is value-adding due to the fact that BAs import their knowledge which helps to support growth and operations of the young companies. Therefore, the aim of this master thesis is to gain insights based on a quantitative evaluation in this area and to derive to a theory as a starting point to fill the above mentioned research gap. Consequently, this thesis investigates the following research question:

What are the important value-adding experience factors a business angel has to contribute to a start-up in order to be successful?

The results of this thesis point out that the only experience factor of a BA on the successfulness of a start-up are his or her relevant industry experiences. All others experience factors such as the education level of the BA, the number of previously founded companies as well as the actual amount invested in US Dollars tend to not have significant impacts on young ventures that seek for external resources to ensure their future growth.

This thesis starts with an overview of current literature based on business angels, business angel groups as well as funding mechanisms for young start-ups. After the literature review, the hypothesis guiding throughout this study are elaborated on followed by the methodology description. The results of this thesis are then presented and analyzed after which a discussion

including the limitation of this study can be found. At the end, the main arguments are summarized within the conclusion.

2.0 Literature Review

The following chapter gives an overview of current literature on business angels and their impacts on start-up. Firstly, external funding mechanisms that are available for young ventures are discussed followed by a general overview about BAs and BA groups. This chapter finishes with an analysis of the motivation of BAs to invest into start-up as well as how it is possible to evaluate start-ups based on the limited information available.

2.1 External Funding Mechanisms for start-ups

Start-ups have two major capital markets they can rely on, namely the formal and informal capital market (Brzozowska, 2008; Organisation for Economic Co-operation and Development, 2011; Robb & Robinson, 2012). Traditional venture capitalists can be found within the formal venture capital market with starting investments of around \$2 million. Looking on the other side of the capital market, informal investors invest their own cash into new companies in order to ensure their (potential) future growth (Shane, 2008). In other words: The formal venture capital market is based on external money that is managed by an organization whereas the informal venture capital market consists of private funds directly from the investors. A previous study by Wetzel (1983) identifies informal investors as extremely wealthy individuals who use their own resources to help young companies during their early stage to growth. Nevertheless, an above average return is usually expected through those investments. Within the study by Shane (2008), BAs are defined as individuals that invest their own money and knowledge into companies. Aram (1989), as well as Aernoudt (2005), also identify that one of the main differentiators between traditional investors and BAs is the inclusion of their time and experience. Therefore,

one can say that the major difference between an informal investor and a BA is the knowledge transfer that occurs after the initial investment. As BAs invest their own funds into start-ups, their motivation is high that those start-ups become successful in order to gain a positive return. Consequently, what they investment is more than money only. A study by Ardichvill, Cardozo, Tune, and Reinach (2002) also supports this statement as they found out that 65% to 95% of all BAs provide more than solely financial help. Thus, each BA is an informal investor. Yet, not every informal investor is a BA (Shane, 2008). Furthermore, the fact that there are no formal guidelines and requirements on BAs is another indication that BAs fall under the category of the informal venture capital market. Another study by Ardichvill et al. (2002) also categorize BAs as informal venture investors and adds more validity to this statement.

Looking at diverse personal attributes of BAs, different BAs interact in other ways within their backed companies. Prowse (1998) identifies two major categories of BAs, namely active and passive BAs. Within his study, active BAs have many interactions within the invested-in company in order to guide and help their decision making. Furthermore, the above-mentioned knowledge transfer plays an important role for the active BA. Another study by Zarutskie (2010) points out, that many active BAs use a traditional VC approach once the investment was made. He argues that an active BA, much like a VC, have high influences on strategical as well as governance decision. As a result, both investors actively aim for changes within the company. Unlike active BAs, passive BAs mainly invest their resources within the company and look for less interaction with the companies' decision makers. Yet, there is still a higher level of involvement for the passive BA in order to not be segmented as an informal investor only. Still, the level of involvement is significantly lower compared to active BAs. The active BAs are the one that invest more time and efforts into the young ventures.

Due to the fact that start-ups usually need a rather small investment, VC are not (yet) interested in investing in young start-ups. The equity gap that occurs during early stages of the start-up can be closed with rather small investments by BAs (Clercq et al., 2006). Consequently, one can see why especially young start-ups look for business angels. The study by Iruarrizaga and Santos (2013) refers to a figure from the Organisation for Economic Co-operation and Development (OECD) which graphically represents the equity gap (financing gap) of those ventures. This figure is shown below.

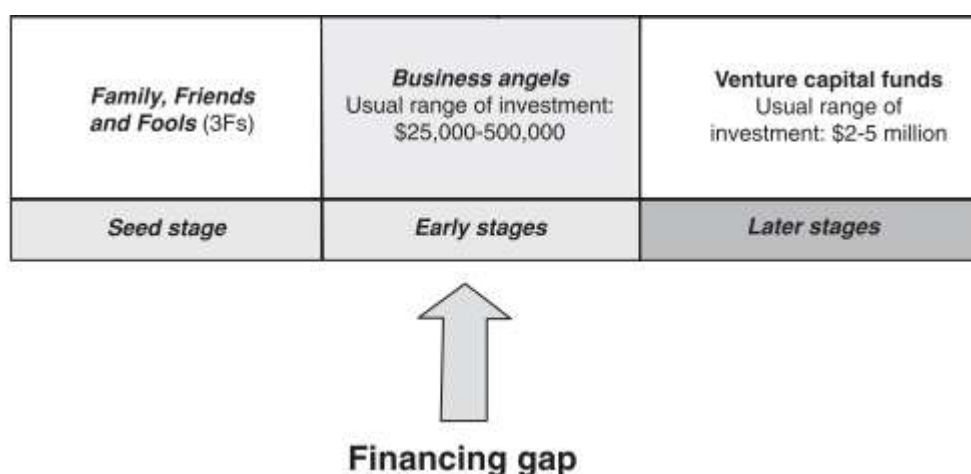


Figure 1 – Overview of Capital Market; Source: Iruarrizaga & Santos, 2013

Not only the stage of the start-up plays an important role in finding suitable investors, also the company size has an impact on the investment. As Cassar (2004) mentions in her study, larger start-ups tend to have a higher proportion of debt on their balance sheet compared to smaller start-ups. This is the direct result of credits taken in order to ensure sufficient resources ensuring future growth. In other words: The bigger the start-up, the higher the necessity for higher credits leading to bigger investments taken by external investors. One reason for this phenomena is that the bigger the company, the higher the spending that might not be possible to be paid solely from savings by the founder. Taking this into consideration in the perspective of

an example, a founder might be able to invest his or her money for a new computer. However, if the company grows to ten employees, this founder might not be able to buy those ten computers from own savings. Therefore, external investments are necessary to ensure the cash flow of the company. Consequently, due to the size of the investment, bigger sized start-ups tend to be more interesting for venture capitalist and less interesting for BAs. Even though it may seem that the VC capital market is bigger in size due to higher investments, one shall remember that the BA capital market is bigger in size. Yet, more studies are conducted on the VC capital market than on the BA capital market.

2.2 Business Angels and angel groups

As already mentioned in the introduction, Deakins and Freel (2009) define BAs as “*private, wealthy individuals who invest their money and experience in small, unquoted entrepreneurial ventures with which they have no family connection*”. Even though this is based on this specific definition, one can find different definitions and understanding of business angels. Also, Avdeitchikova et al. (2008) conclude in their study that one of the major problems found in BA literature, that most studies are based on inconsistent definitions of BAs. For the purpose of this thesis a BA is defined as “*an individual and wealthy investor, who aims to support young companies by financing them as well as giving strategical recommendations based on personal experience*”. Furthermore, unlike other forms of investing, there are no clear regulations concerning reporting on investments. As a result, data on those investments are difficult to gather which is one reason why many authors present different finding on this topic. An example about different figures is the average amount spend on investments. Studies by Landström (1995) and Smith et al. (2011) found out that angel investments start at \$25’000 and go up until \$500’000. Yet, another study by Shane (2008) as well as current figures by Angellist (2016) show that

investments can be as small as \$10'000 or even less. (See Appendix I). Nevertheless, what all those studies have in common are the maximum investments BAs usually make within companies- in this case \$500'000. However, this contradicts with another study by Clercq et al. (2006) indicating that BAs invest up to \$ 2 million. Nevertheless, this financial gap is also one of the main reasons why BA are of such a high importance for young companies. Young companies have to fill an equity gap that cannot be filled by “close-by” investors such as the famous 3 F's (Friends, Family, and Fools) (Iruarrizaga & Santos, 2013). As a matter of fact, BAs prove to be the next logical equity source after the 3 F's (Prowse, 1998). Yet, those young companies are not yet attractive enough for traditional VC. As already mentioned, the study by Clercq et al. (2006), typical VC investments start at \$2'000'000. In this case, a BA is a perfect opportunity to bridge this gap. Another important differentiator between BAs and VCs is the source of their investments. Whereas BAs use their own resources, traditional VCs use resource from their customers for which they are responsible for (Ardichvill et al., 2002).

Even though there are no regulations on BAs, one can find groups of BAs in which individual BAs group together in order to use their synergies to optimise their investments leading to higher returns. According to Preston (2004), BA groups might vary significantly from each other concerning their size, their industry focus, their level of formality, etc. Within his study, he developed a decision matrix with which different BA groups might be easier to segment. His decision criteria are (1) member vs manager-managed, (2) legal structure, (3) membership details, (4) financial resources and (5) investment process. Different studies also identified potential advantages of grouping up. The study by Mason (2006) identifies decreased searching costs as a potential advantage. As a result, the network within BA groups can be used to find new investment opportunities rather than searching for those in the open market. Another advantage of BA groups is the use of collective experience (May & Simmons, 2001). This

advantage means that BAs in groups have the opportunity to consult each other on past experience. In case that BA 1 never experienced a new situation, this investor might ask BA 2 for advice as this investor already went through this situation. The result is that through experience sharing and the given recommendation, the potential for wrong decisions decreases. Shane (2005) also identifies the independence of external knowledge within BA groups. In this case, BAs can rely on each other knowledge and expertise in certain areas. As a result, external knowledge does not have to be bought from external suppliers that might result in a cost reduction. One potential example is that a BA needs a new code for the software of his backed company. Even though coding might not be in his expertise, he can rely on a fellow-BA within his group who has high expertise in this area. Nevertheless, with BAs in general, it is again rather difficult to gain data about BA groups. Based on the fact that no formal reporting is required, this is mainly also avoided. As a result, there is barely any data on how successful those groups actually are.

According to a study of US-angels, 80% of all BAs hold, at least, an undergraduate degree (Freear, Sohl, & Wetzel, 1994). Furthermore, this study is supported by a UK-based study coming to the same result (Stevenson & Coveney, 1994). Their study comes to the result that more than 70% of all BAs hold a university degree. However, not only BAs tend to be highly educated individuals, also, founders are found to hold university degrees in their area of expertise (Wadhwa, Freeman, & Rissing, 2010). Consequently, both sides can be labelled as highly educated which might result in a collaboration of different skills and resources that might optimize their final output. In perspective to this thesis the final outputs are higher returns for the BA and valuable decision-making support for the entrepreneur. Another study by Dimov and Shepherd (2005) links low failure rates and high success rates of BA investments on the diversified education level of both parties. According to the authors, broader education levels,

as well as disciplines, increase the likelihood to spot new opportunities as well elaborating those from different perspectives.

Consequently, this thesis wants to investigate the relationship between the education level of the BA and the successfulness of young start-ups. How important is the education level of investors? Can it be concluded that a highly-educated BA is per se a better BA than a lower educated BA? Or is the education of a BA not relevant at all?

2.3 Motivation of Business Angels to invest in start-ups and their impacts

As already mentioned, a BA also takes action within his or her backed company. A study by Sullivan and Miller (1996) distinguished between three different motivational drivers why BA do invest into young companies. These motivation drivers are (1) economical, (2) hedonistic and (3) altruistic. While the hedonistic and the altruistic investors also take action within the company due to internal motivation factors (such as interest in the industry, interpersonal relationship with the founders, strong connection to the product etc.), the economic BA only focuses on the financial return of the investment. In the context of this study, the economic investors come closest to the earlier mentioned passive BA (Prowse, 1998). Nevertheless, it is important to mention that no matter what the motivation is to invest into a young company is, according to Macht and Robinson (2009), 2/3 of all BAs still invest with the goal to receive a financial return at the end of their investment time horizon. From those roughly 66%, 50% (i.e. ~ 33% of all investors) also invest with the purpose of the sheer fun of investing in companies where they can integrate their previously gained experiences. The question arises, whether fundings by BAs who have industry knowledge are more valuable? Is it possible to say that more industry knowledge by the BA is a potential success factor for the investment? This question

shall be explored throughout this thesis. Coming back to the previous findings, these results partially differ from a study about French Business Angels (France Angels, 2004). Their results can be seen in figure 2 which shows that 34.5% of all French BAs invest due to the added value of the company followed by adventure and fun within the investment (27%). According to this study, only 7.8 % of all French BAs invest only due to potential profits.

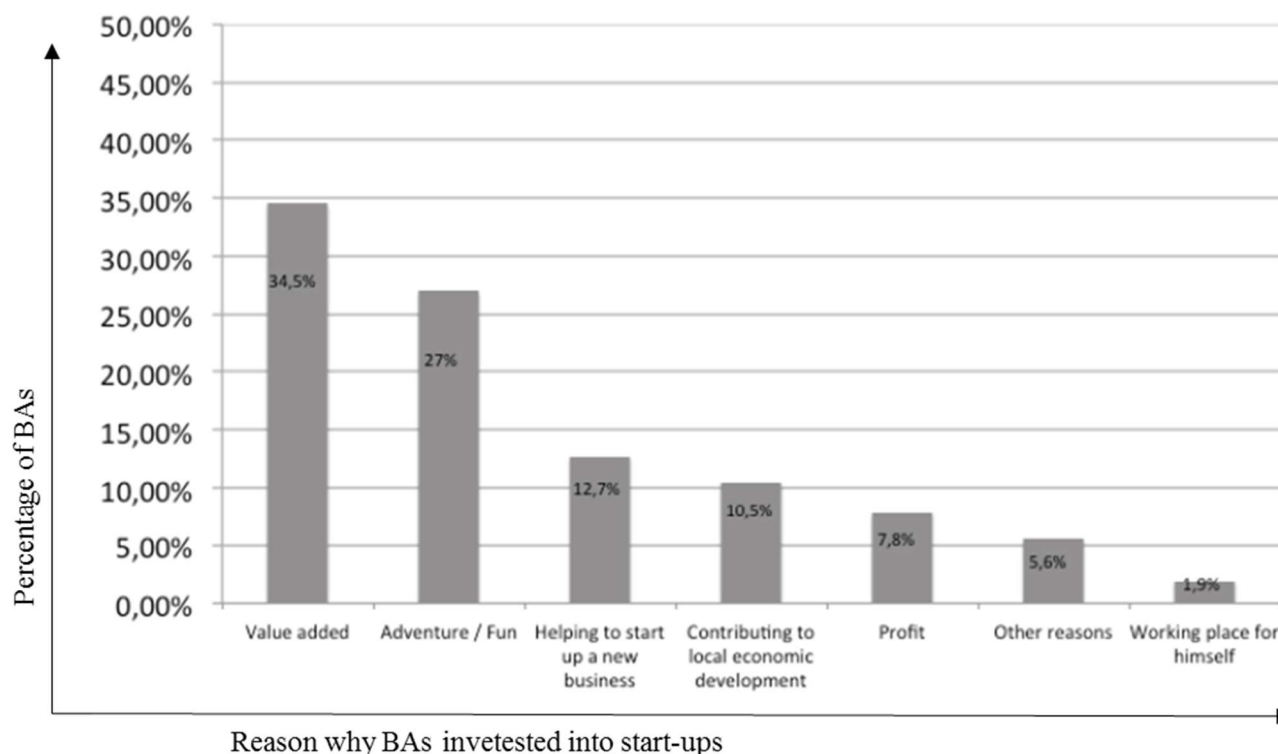


Figure 2 – Reason why BAs invest; Source: France Angels, 2004

Another important factor of BA interactions is the timing of the investment concerning the companies' existence. According to Freear et al. (1994), the majority of investments happen during the early stages of start-ups. This goes hand in hand with the above-mentioned statement which says that BAs are responsible for closing potential equity gaps during their early stages. Also, the more developed a company is, the more valuable this company becomes. This leads to the result that the company is entitled to ask for higher investments. The higher the demanded investments and the more valuable a company becomes, the more attractive it becomes for VCs.

Nevertheless, the fact that most BAs invest during early stages is also supported by a later study by Wiltbank and Boeker (2007). Furthermore, Åstebro and Bernhardt (2003) found clear evidence, that funding mechanisms that are non-bank related prove to be more successful for a start-up than borrowing this money from banks solely. According to their paper, those non-bank investments can be either from the 3F's (Friends, Family, and Fools) or from BAs. The reasoning behind this is that those investors usually also provide guidance and opinions next to the monetary value as such. A study by Macht and Robinson (2009) elaborates further on this aspect as the authors identify four specific benefits that BAs bring with them. These are (1) help overcoming funding gaps, (2) filling knowledge/ experience gaps through provision of their experience and involvement, (3) provision of contacts and (4) facilitating future funding. Of course, there are many other potential influences on start-ups, such as for example an increase in external credibility due to the angel investment (Madill, Haines, & Riding, 2005). All in all, it becomes clear that due to the internal motivation of BAs, such investments cannot be seen as monetary only. Still, can it be said that the more a BA already invested in start-ups, the better his decision making becomes? Is there an influence between prior done investments and the likelihood of successful investments? These questions are especially important in the setting of BAs, as their investment also involves a knowledge transfer that might be crucial to the overall success of the young venture.

2.4 Measuring the successfulness of a start-up

Gathering (financial) data of start-up turns out to be difficult. The most obvious reason is that start-ups are usually not listed on the stock exchange which means that they are not obliged to share financial data publically. However, even if start-ups share this data, based on their short time of existence, it is very likely that their performance results in financial losses. This is the

consequence of the fact that start-ups require a certain time in order to break-even their initial investments. Up to this point, start-ups usually have a negative cash flow. As a result, classic performance measurements identified by Koller, Goedhart, Wessels, and Copeland (2010) such as Return-on-investment (ROI), profit/loss analysis and/or the overall value of the company/increase in share prices cannot be used. As a matter of fact, alternative performance measurements need to be found for this thesis in order to define what a successful start-up is.

An early study by Prowse (1998) identifies an initial public offer (IPO) as well as an acquisition as the most powerful success factors with regards to evaluating successful start-ups. Examples of startups such as WhatsApp, that was acquired by Facebook for \$19 billion in 2014 or the acquisition of Skype by Microsoft worth \$8.5 billion shows how valuable such start-up might become within a short time period (Arthur, 2013; Covert, 2014). Furthermore, later studies by Wiltbank and Boeker (2007) and Guo, Lou, and Pérez-Castrillo (2015) also use acquisitions and/ or IPOs as success factors for BA investments.

Consequently, the successful exit via an IPO as well as acquisitions are used throughout the analysis of this thesis. However, it shall be mentioned that using a successful exit as the success factor comes with potential limitations, which are discussed later within this thesis.

3.0 Hypothesis development

This chapter builds upon the subquestions that were asked in the previous chapter. The below-constructed hypotheses serve as a guideline through the later-on conducted data analysis of this thesis.

3.1 The relationship between start-up success and the education level of the BA

A study by Freear et al. (1994), based on a large-scale survey, found out, that most BAs are highly educated individuals. Furthermore, the same study also found out, that the average BA is usually middle-aged with considerable business experience. While taking Freear et al. (1994) aspects into consideration, one could assume that the higher one's academic education, the higher his or her general knowledge and the higher the likelihood of success business decisions of this individual. While this statement is rather vague, Robinson and Sexton (1994) found evidence in their study that there is a positive relationship between years of formal education and being a successful entrepreneur. Later studies by Karlan and Valdivia (2006) and van Praag and Versloot (2007) also confirm these results indicating that the higher the formal education of individuals, the higher their likelihood of business success. Contradicting to those studies, there are also famous examples of successful university drop-outs (such as Mark Zuckerberg, Steve Jobs etc.), that still founded highly successful companies. Even though there is evidence that education is beneficial for successful businesses, this thesis investigates the above-made statement with respect to BAs and their winged companies. Does the educational level of a BA have an impact on the successfulness of a start-up? With respect to the results of Robinson and Sexton (1994), there should be a significant relationship. Consequently, the following hypothesis will be investigated:

H1: There is a positive relationship between the educational level of the BA and the successfulness of the start-up.

3.2 The relationship between start-up success and the industry experience of the BA

As already stated, BAs usually invest more than money into the start-up. Usually, their knowledge and experience are of high importance. Consequently, one could argue that the higher the industry knowledge of the BA, i.e the more years of experience in the industry, the higher the quality of his or her inputs. A study by Wetzel (1983) came to the conclusion, that BAs prefer to invest in areas where they already gained previous knowledge. Another more recent study by Clercq and Dimov (2008) comes to the same conclusion and it also finds out, that industry knowledge has a positive effect on investment performance. As Wiltbank and Boeker (2007) already found out throughout a study with the same sample used throughout this thesis, there is no difference in industries of investments and their returns. Therefore, this thesis will not differentiate between industries. The current basic intuition is that the more industry knowledge the BA gained prior to the investment, the higher the likelihood of a successful exit. Yet, this has to be confirmed with the help of the sample by Kauffmann. Also, Brzozowska (2008) states in her study, that industry experience is one of the important managerial success factors concerning entrepreneurial success. Consequently, the following hypothesis is constructed:

H2: There is a positive relationship between the business angels industry knowledge and the successfulness of the start-up

3.3 The relationship between start-up success and prior founded companies by the BA

Not only has the BA's industry experience a role in the successfulness of a start-up. Also, the BA should have prior experience in founding businesses. This can be related to the theory of the learning curve in the manufacturing industry, where each additionally produced unit results in a decrease in costs due to increased process experience leading to increased efficiency (Spence, 1981). However, in the case of a BA, the manufacturing aspect changes to behaviours after the initial investment including their guidance and knowledge sharing. According to Madill et al. (2005), previously gained experience concerning BA investments results in highly valuable managerial experience. Therefore, each prior taken investment results in more experience. Furthermore, young business owners usually lack experience in strategical resources. Young entrepreneurs do have the opportunity to avoid certain mistakes. In this case, BAs can interfere and guide with their level of expertise by giving qualified guidance based on their previously gained knowledge (Politis, 2008). Based on the previously mentioned researchers, it can be said, that the more funding experience the BA has made, the higher the likelihood that the followed investment results in a successful outcome as well. It is believed that the more companies the BA has found previously, the higher the likelihood of a successful start-up. Yet, this statement needs to be tested. Therefore, the following hypothesis is developed:

H3: There is a positive relationship between the number of previously founded companies by the BA and the successfulness of the start-up.

3.4 The relationship of the amount invested on the successfulness of start-ups

In perspective to this thesis, one factor that might have an influence on the successfulness of a start-up is the amount invested by the BA. The intuition is, that the higher the amount invested,

the higher the likelihood of a successful start-up. This statement is based on the theory of psychological ownership, stating that employees and/ or investors take ownership of achieving a specific pre-determined goal (Pierce, Kostova, & Dirks, 2003; van Dyne & Pierce, 2004). In the scenarios of start-up financing, the BA takes ownership with this investment with the aim to achieve a pre-set goal. Ultimately, the idea is that the higher the investment, the higher the motivation of the BA to interfere in order to lead to successful decisions. Consequently, it has to be examined whether higher amounts invested by BAs have an impact on the final outcome of creating a successful start-up. In order to do so, the following hypothesis has to be tested:

H4: There is a positive relationship between the amount invested (in US Dollar) into the start-up and the successfulness of the start-up.

3.5 Theoretical model



Figure 3 - Theoretical Model; Source: Author, 2016

The above shown theoretical model is designed to guide through this thesis. As a dependent variable, the successful exit of a start-up has been chosen. A successful exit is defined as either an acquisition or an IPO. The difficulty here come with the specific time frame, in which the exit has to be announced. In order for the data to be more representative, only data entries after the year 2000 are taken into consideration. The overall independent variable is the BA's experience. This overall independent variable is subdivided and generates a total of four independent

variables that are (1) the number of companies founded prior to the investment, (2) the level of education of the BA, (3) the industry knowledge of the BA and (4) the initial investment in US Dollar. The fourth independent variable is the monetary value the BA has invested into the start-up. The general assumption lies here, that the higher the initial investment, the higher the likelihood of a successful exit. The reasoning behind this statement is that one can expect BAs to research more and evaluate more on the start-up, the higher his investment will be.

4.0 Methodology

The following chapter describes the methodology that is used throughout the data analysis. It starts with a description of the research design chosen for this analysis followed by descriptions of the dependent variable as well as the independent variables. The theoretical model used finalizes this chapter.

4.1 Research design

The secondary data that is used for this analysis is extracted from a database by the Kauffman foundation. The Kauffman Foundation works together with Robert Wiltbank (University of Willamette) and Warren Boeker (University of Washington) on a project called *Angel Investor Performance Project (AIPP)*, which gives access to a database consisting of 276 BA groups based in the United States. Data was gathered throughout a survey consisting of 83 questions (see Appendix II). Answering these questions was possible via a multiple choice approach as well as open end questions. After checking all data entries for missing data, 115 data entries are used for this thesis. According to the Kauffman foundation, the AIPP database is currently the largest available database on BAs and their attributes in combination with their investments in start-ups. All data used is publicly available and free of charge after registering on their website.

In order to achieve suitable results, a logistical regression has to be conducted. According to Pallant (2013), a logistical regression shall be conducted when the dependent variable is categorical. According to Geher and Hall (2014), a categorical variable is a variable where the outcome falls in between a certain range of pre-set options. In the case of this thesis, there are only two potential dichotomous outcomes for the dependent variable (successful start-up or not) and this is de facto categorical. Furthermore, logistic regressions are used to predict the

contributing power of variables to the dependent variable (Pallant, 2013). As this is exactly the purpose of this research, a logistical regression analysis is most suitable.

The following regression formula is set up in order to conduct this research:

$$y = a + bx_1 + cx_2 + dx_3 + fx_4 + e$$

where:

y = Probability of a successful start-up a = Intercept

b, c, d, f = Coefficients

x_1 = Education level of BA

x_2 = Industry experience

x_3 = Founded companies

x_4 = \$ invested

e = Error term

The significance level of this research is set at 95%. According to Salkind (2011), the significance level is the risk associated with the confidence in the sample that represents the overall population.

4.2 Dependent variable

As already mentioned previously, within this thesis a successful start-up is defined by its successful exit. Given the fact that previous studies (Prowse, 1998; Wiltbank & Boeker, 2007, Guo et al., 2015) also used this metric to define a successful young venture, the author of this thesis is supported in his line of argumentation. The AIPP data set provides data on 5 different exit forms, namely (1) ceased operating, (2) bought out by an operating firm, (3) bought by investors, (4) an IPO and (5) other. With regard to this thesis, only option (2), (3) and (4) are seen as a successful exit. (1) and (5) are defined as non-successful. In order for the statistics software to run the regression correctly, each successful exits will be coded to “1” and each

unsuccessful exit will be labeled with a “0”. This is graphically represented in the below table. As only two potential outcomes are possible (i.e.: “0” or “1”), the data is binary and the level of measurement is nominal.

Successful exit (bought out by an operating firm, bought by investors or an IPO)	= 1
Unsuccessful exit	= 0

Table 1 - Overview Coding Un/ Successful; Source: Author, 2016

4.3 Independent variables

The researched value-adding experience factors investigated throughout this thesis will be (1) the number of companies founded prior to the investment, (2) the level of education of the BA, (3) the industry knowledge of the BA and (4) the initial investment. Therefore, four independent variables are formed based on the above-mentioned hypotheses. Below, each independent variable is described in detail.

The education level of BAs

The first hypothesis tests the relationship between the education level of BAs and the successfulness of their winged young ventures. The AIPP database defines five different education levels that are (0) no higher education (university and/or university of applied science), (1) bachelor degree, (2) master degree, (3) JD¹ and (4) Ph.D. However, (0) no higher education does not exclude that the BA attended a job trainee or an apprenticeship. The data values given

¹ Juris Doctor: Professional doctorate – very common for law students in the United States of America, Canada, Australia and other common law countries.

by the AIPP database will not be coded and analysed as given to see if there are differences in the education level and the successfulness of start-ups. As the values can also be seen as a ranking, the nature of this variable is ordinal and the level of measurement is ordinal as well.

No university degree	= 0
Bachelor's Degree	= 1
Master's degree	= 2
JD	= 3
Ph.D.	= 4

Table 2 - Overview Coding Educational Level; Source: Author, 2016

Industry Experience

The second independent variable used is the industry knowledge the BA possess prior to investing into the start-up. Within the sample, industry knowledge is defined in years with a range between 0 and 47 years of industry experience. This indicates that BAs also invest in young ventures without any industry knowledge as well and BAs with a lot of experience. It is questionable how much knowledge industry newcomers can provide to start-up. Of course, it is possible that those BAs share different experiences such as financial guidance and other managerial aspects. Yet, this will be tested with the help of the second hypothesis. As with the previous independent variable, these data entries will not be coded and analysed as they are given in the sample. As the years of experience consist of a non-arbitrary zero point (i.e. experience starts at 0 years), this variable is rational.

Years of Industry Experience	= # of years of experience in the industry
-------------------------------------	--

Table 3- Overview Coding Industry Experience; Source: Author, 2016

Number of previous founded companies

The third independent variable used throughout this thesis is the number of previously founded companies by the BA. Consequently, this variable tests the third hypothesis. Throughout the data set, the number of previously founded companies varies between 0 and 22. This shows that there are immense differences in previous experience concerning entrepreneurial know-hows of BAs. For the purpose of this thesis, the values (0 between 22) are not coded and taken as giving in the database. As with the previous variable, the nature of this variable is rational as well.

Number of previously founded companies	= # of previously founded companies
---	-------------------------------------

Table 4 - Overview Coding Previous Companies; Source: Author, 2016

The amount invested

The fourth and last variable investigated to test whether there is a relationship on the likelihood of the successfulness of start-ups is the actual amount invested. As the AIPP dataset provides the actual amounts in US Dollars invested, no coding is necessary. The investment range lies between USD 5000 and USD one million. Even though the value of \$5'000 as an initial investment contradicts with the studies by Smith et al. (2011), Shane (2008) and Landström (1995), this amount is taken as given and not further investigated. As the variable as such consists of a non-arbitrary zero point, it can be categorized as a rational variable.

Amount invested	= amount invested in US Dollars
------------------------	---------------------------------

Table 5 - Overview Coding Initial Investment; Source: Author, 2016

5.0 Analysis and Results

Throughout the following paragraph, the empirical results, as well as their respective analysis, is presented. All calculations and results are based on the above-mentioned model and regression formula. The paragraph starts with the presentation of the empirical results and finishes with the analysis of those results.

5.1 Empirical results

As mentioned above, a logistic regression is used in order to conduct this research. The analysis is conducted with the help of SPSS based on the previously mentioned regression formula. Appendix III represents the full statistical output. The table below present the results that are used to test the hypothesis.

Variables in the Equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	coded_edu	-,018	,131	,019	1	,891	,982	,760	1,269
	industryexp	,046	,021	4,699	1	,030	1,047	1,004	1,091
	numfounded	,017	,057	,093	1	,760	1,017	,911	1,137
	initialinvest	,000	,000	,359	1	,549	1,000	1,000	1,000
	Constant	,144	,491	,086	1	,769	1,155		

a. Variable(s) entered on step 1: coded_edu, industryexp, numfounded, initialinvest.

Table 6 - Qualitative Results; Source: SPSS, 2016

5.2 Analysis

With the help of the results above and the results in appendix III, we are able to test all four hypotheses. In order to do so, a check whether each independent variable has a significant impact on the dependent variable has to be conducted. In other words: We need to check which experience factor of the BA has an impact on the likelihood to become a successful start-up.

The first hypothesis intends to test whether there is a relationship between the education level and the likelihood of a successful exit of this start up (*H1: There is a positive relationship between the educational level of the BA and the successfulness of the start-up*). Based on the p-value of 0.89, H1 is not supported which indicates that the education level of the BA has no likely impact on the successfulness of start-ups. In other words: A highly educated BA is not a guarantee that his or her activities lead to success. As an already used example previously, Mark Zuckerberg, the founder and CEO of Facebook, did not pursue his degree at Harvard University. Instead, he decided to focus on his social media platform. Today, Facebook is the most influential and most used social media platform and worth more than \$328 billion (Zillman, 2016).

The second hypothesis tests whether years of industry experience of the BA have an impact on the successful exit of a start-up (*H2: There is a positive relationship between the business angels industry knowledge and the successfulness of the start-up*). The results ($\text{industryexp} = 0.03$; $\text{significance} < 0.05$) indicate that there is indeed a significant impact on the industry experience the BA gathered prior to the investment. In other words: The higher the BA's industry experience, the higher the likelihood that his or her investment leads to a successful exit. This result is directly linked to the experience the BA gained throughout his or her career. As a result, the BA can advise the entrepreneur from his or her experience within the industry. Therefore, certain decisions are backed by the BA's knowledge leading to potentially better choices. Consequently, it is possible to advise each young founder to look for investors with the highest industry experience. It is very likely that advice and guidance from those investors lead to profitable and correct decisions that ultimately result in successful start-ups.

In contrast to the second hypothesis, the third hypothesis (*H3: There is a positive relationship between the number of previously founded companies by the BA and the successfulness of the start-up*) cannot be supported. Therefore, one can say that the number of previously founded

companies does not have an impact on the BA's impact on the successfulness of the start-up. However, this might seem reasonable in the perspectives that founding different companies per se is not an indicator for valuable experiences. Also, it is not possible to say whether those companies were successful or not. Another aspect builds upon the second hypothesis. When considering the industry of the previously founded companies, a BA who founded companies solely in the automotive industry might not be the right BA for FMCG (Fast Moving Consumer Goods) start-ups. Even though this BA founded many companies, a lack of industry-specific knowledge occurs. In other words: The number of created companies is not an useful instrument to increase the effect of a successful start-up by the BA.

Lastly, the fourth hypothesis tests the moderating effect of the actual amount invested by the BA on the impact of the successfulness of the start-up (H4: There is a positive moderating effect on the amount invested (in US Dollar) into the start-up and the successfulness of the start-up). Based on the results above, it can be seen that there is no significant relationship between the amount invested and the successfulness of the start-up. In other words: The amount invested is not an indicator of the future development of the start-up. Therefore, there is no significant difference between rather small investments (starting at \$5'000) and rather high investments (> \$ 1 mil).

The table below represents a graphical overview of which hypothesis is supported or not.

H 1	<i>Not supported</i>
H 2	<i>Supported</i>
H 3	<i>Not supported</i>
H 4	<i>Not supported</i>

Table 7 - Hypothesis Test Overview; Source: Author, 2016

Based on the results presented, it can be concluded that only industry experience in years by the BA proves to be the only relevant experience factor young start-ups can benefit from. Consequently, if young founders have the opportunity to choose between certain investors, their focus should be on their experiences in the industry the start-up works in. Other factors such as the education level, previously founded companies and the actual investment in US Dollar cannot be declared of definitive success factors.

6.0 Discussion and Limitations

The following chapter presents the discussion of the findings in perspective to previous literature. Furthermore, it presents recommendations for further researches as well as the limitation in respect to this research.

6.1 Discussion and future research recommendations

Even though a wide range of start-ups are funded every year, nine out of ten will not succeed in the long-term (Partel, 2015). One of several success factors for new ventures is to choose the right funding method (Laitinen, 1992). Herby the challenge is to decide which type of investor form fits best. Yet, not only are the financial resources an investor can equip a new venture with critical for the success but also nonfinancial resources such as networks, knowledge management and valuable experience exchange. However, most of the recent literature does not investigate which funding method a new venture should choose but exactly the opposite – which start-up an investor should select when searching for new investment opportunities. Therefore, this research investigates from a start-up perspective with a focus on the investor type Business Angels.

BAs seem to be nowadays one of the most important funding sources for start-ups next to the famous 3 F's (Friends, Family, and Fools) and VC funds (Avdeitchikova et al., 2008). BAs are considered as individual and wealthy investors, which aim to support young companies by financing them as well as giving strategical recommendations based on personal experience. Yet, the strategical recommendations and personal experience can be based on a different background of the BA such as (1) education, (2) years of experience in the specific industry, (3) number of prior investments into start-ups as well as (4) the amount of money invested into the start-up and therefore the connectedness between investor and founder (the higher the investment the higher

the founder feels obliged to be successful (van Dyne & Pierce, 2004 ; Pierce, Kostova, & Dirks, 2003) . Consequently, the research questions was:

What are the important value-adding experience factors a business angel has to contribute to a start-up in order to be successful?

Based on secondary data a logistical regression was performed to test if the four above mentioned variables have a positive impact on the success of a newly started venture. In that case, the dependent variable success was measured if on the one hand the start-up was bought out by an operating firm or investor or on the other hand if they had a successful IPO.

The outcome of the regression analysis shows that only the BA's industry experience in years has a significantly positive influence on the success of a start-up. Generally, it can be said that BAs anyways prefer to invest into new ventures that are founded in their preferred industry (Clercq & Dimov, 2008; Wetzel, 1983). BAs often reject investment opportunities which are not in their specific industry they have gained knowledge in even if the opportunities seem to be highly promising (Mason & Harrison, 2008). Mason and Botelho (2014) call BAs even "Gatekeepers" which can make the final decision if a start-up goes on and growth or has to search for an exit.

Deciding which type of investor suits best is one of the key challenges to success for a newly founded venture and therefore, the results of the study can be key to a sustainable long-term growth for start-ups. However, there seems to be a contradiction between the supported hypothesis of industry experience as well as knowledge and the third hypothesis of the number of previously founded companies by the BA. One could expect that knowledge and experience go hand in hand with the number of founded start-ups in the past and therefore also the more founded start-ups the higher the chance for a successful exit. Yet, as already mentioned, there

seems to be no significant relationship between the number of past founded ventures and the successful exit. Furthermore, there seems to be an additional contradiction between the first hypothesis, which presumed a relation between the BAs educational background and success of the start-up that was also not significant and the experience and knowledge of the BAs. One could assume that a BA with a higher education such as a Ph.D. in a specific context would also have a higher knowledge of a specific industry or situation and therefore could be beneficial to a newly founded venture. Furthermore, Freear et al. (1994) aspects into consideration, one could assume that the higher one's academic education, the higher his or her general knowledge and the higher the likelihood of success business decisions of this individual. In this case education and knowledge seem to be directly connected with each other. Yet, the data shows no significant relation between the educational background of the BA and success of the start-up. A potential reason for this is that most BAs are highly educated individuals with considerable business experience (Freear et al., 1994) and the data set therefore is not adjustable enough. Interestingly, the last hypothesis of a positive relationship between the amount invested (in US Dollar) into the start-up and the successfulness of the start-up was also not supported contrary to most of the previous literature findings and the theory of psychological ownership. This theory states that the higher the amount invested into a business the higher the likelihood of a successful start-up as employees and/ or investors take ownership of achieving a specific pre-determined goal (van Dyne & Pierce, 2004; Pierce et al., 2003). Yet, the data showed no significant relationship and the reasons for this can be manifold. This may be due to the general liability structure of a start-up as often there is not only one source of funding. Consequently, the outcome is maybe too dependent on the limited dataset and might change with different more detailed data about the financial situation of the new venture.

Taking together the results of the logistical regression analysis the study contributes on the one hand to the current literature and gives a first impulse to fill the gap from the ventures perspective on deciding which investor to choose. On the other hand, the research gives valuable practical implications for start-ups at hand to be successful in the long term.

Especially the theoretical contribution of this research takes over a perspective which was not often taken in the current literature and sets a starting point to investigate the topic on how to find the right funding method for start-ups. Later on suggestions for future research as made which can contribute towards this new research field and build upon this study. The major takeaway as a practical implication from this research for start-ups is that when thinking about BAs as a way to finance their business they should primarily search for BAs which have experiences and knowledge in the specific industry they are operating in.

However, to back up the hypothesis of industry experience and knowledge of BAs future research can investigate the difference between industries and success. Perhaps there are industries in which industry experience and knowledge is not as much needed as in other industries. Furthermore future research could differentiate between knowledge and experience. Especially as experience can also be based on the number of start-ups founded which is not supported as a success factor in this study. A further suggestion for future research is to stress out the importance of complete datasets. As mentioned in the limitation later on, many surveys were not filled out completely. As only completed surveys were taken into consideration, the quality of the results suffered. If the AIPP foundation decides to collect data again, it is recommended to communicate the importance of complete data to their members. This would enrich the quality of future findings. Consequently, data such as the round of financing and the number of investors involved in the founding can be assessed. This information can be critical when for example testing again the hypothesis of the relationship between the amounts invested

(in US Dollar) into the start-up and the successfulness of the start-up which was not supported in this study. As already mentioned the concept of psychological ownership might be easier to test with this information. Furthermore, this theory would be also interesting to test under the information how close the relationship and involvement of the BA is. This could also be done in a qualitative case study.

In conclusion for future research, the theoretical model of this study could be taken as a foundation to build upon this in an adapted way such in the following.

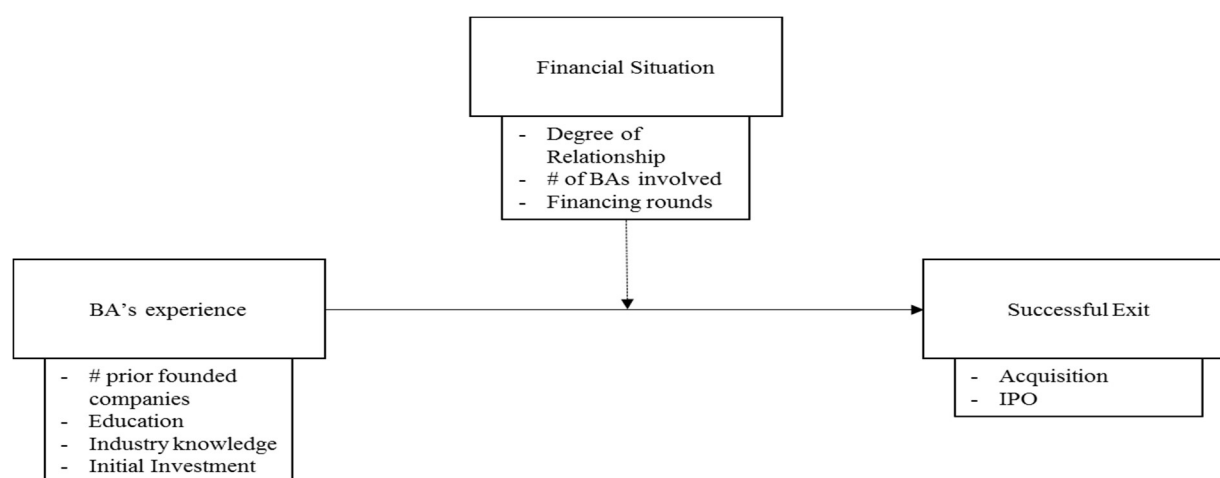


Figure 4 - Possible Future Model, Source: Author, 2016

6.2 Limitations

As with most researchers, this thesis also comes with limitations. The following paragraph describes the most important aspects to take into consideration while analysing the results.

The first limitation is missing data entries found in the AIPP database. Unfortunately, a lot of data is missing throughout the data file as not every BA filled out each question in the questionnaire. Regrettably, no indication of why data misses is provided by the Kauffmann

foundation. A potential reason for this can only be estimated, such as lack of time, lack of interest and/or privacy/ confidential reasons of the BAs. Due to consistency reasons, only data from completely filled out surveys is taken into consideration. As already mentioned previously, future data gathering process by the Kauffmann foundation should make sure to communicate the importance of complete data in their surveys to their BA groups. With a more complete dataset, the quality of those entries would increase which then would lead to more significant results. Overall, the quality of the results would increase hand in hand with more complete data.

Another limitation in connection to the data is the data gathering method as such. As only surveys were sent out to different BA groups with no obligation to participate in the survey, only active groups took part in the survey. Therefore, the results are mainly based on active BA groups only. In other words: Only committed BA groups took part in the AIPP survey. It might also be the case that many BAs did not answer the survey, yet, have significant impacts in different start-ups. However, active BAs might as well not answer the survey as they lack the time and do not prioritise answering surveys in their daily business routines. Another aspect is that only BA groups that are connected to the Kauffmann foundation were contacted. Consequently, the risk of a biased sample may arise due to the self-selecting bias. In this situation, a non-probability sample cannot be guaranteed.

The third limitation is connected to BA groups as such. Data was only gathered from North American BAs that were part of an organized BA group. Therefore, individual BAs were not taken into consideration. Thus, individual and cultural specific characteristic factors are not analysed. Group behaviour might also differ from individual decision making. As a result, individual behaviours have not been included in the study, as only group decisions were possible to analyse. Furthermore, it is not possible to use these results in order to generalize worldwide BA- Start-up behaviours. One of the main reasons arises due to cultural difference. Accordingly,

German BA groups might differ from North American BA groups based on their norms and values or other behavioural reasons. Therefore, it is not possible to use the results of this research to generalize BA groups in the global perspective.

The fourth limitation is the definition of a successful start-up. In the case of this thesis, a successful start-up is defined based on their exit form. In line with this thesis, a start-up can only be defined successful if it went through a formal exit (i.e. bought off by operating companies, bought off by other investors or an IPO). However, not every successful start-up takes part of this measurements. Many “successful” start-ups are not bought by competitors nor are they listed on the stock exchange. One famous example is Snapchat when Snapchat refused a buying offer by Facebook worth \$3 billion (Fiegerman, 2014). Even though the CEO of Snapchat did not accept the offer by Marc Zuckerberg and it is not listed on any stock exchange market, Snapchat is used daily by millions of users. Nevertheless, on the measurement of this thesis, Snapchat would not have been listed as a successful start-up. Consequently, there are many start-ups in the market that are creating great profits and jobs for the population as well as having a high impact on our cultural and technological development. Yet, they might have slipped through the metrics of this thesis.

The fifth limitation that might influence the results is the fact that BAs and start-ups can be pictured as a marriage. In order for a marriage to work out, both partners (wife and husband) need to trust each other and fit each other. Also, they need to find trade-offs in order for both parties to be satisfied. This marriage-metaphor can also be used for BAs and their winged start-ups. The success of start-ups does not solely depend on the BAs and their experiences. Young entrepreneurs also need to work on the success of their start-ups. In the case of BAs and start-ups, the BA can take the role of the husband and the start-up the role of the wife (or vice versa). Both sides need to work on the successful outcome and it cannot be said that the husband/ wife

is purely responsible for the success. Nevertheless, this factor might play a crucial role in the outcome of the start-up and shall be researched in future studies in this field. Still, based on the AIPP dataset, it was not possible to include this factor based into the research.

7.0 Conclusion

Without the doubt of a question, young start-ups are the reason of where we are today with our society. Our society needs innovative companies in order to develop further. However, these companies need to be founded and most of the times those founders need additional external help in their growing phase. Not very unlikely this help consists of knowledge or money or a combination of both. Both these factors can be achieved with the help of Business Angels. This research is based on the experience factors of BAs and what they can do in order to help young entrepreneurs to turn their young companies into successful start-ups. As a result, this thesis answers the research question: *“What are the important value-adding experience factors a business angel has to contribute to a start-up in order to be successful?”* In order to define experience factors, three attributes of BAs have been analysed, namely the education level, the industry experience and the number of previously founded companies. Furthermore, it has been investigated if next to those experience factors, the actual amount invested impacts the likelihood of successful start-ups. As there are many different options on how to define a successful start-up, this thesis uses the start-up’s exit form as a guideline to successfulness. With respect to this research, a start-up can be defined as successful if one of the three following scenarios took place: 1) An initial public offer, 2) bought off by other operating companies or 3) bought by investors.

The results of this thesis show that from the four factors, only industry experience has a significant impact on the likelihood of young start-ups to be successful. Therefore, it is wise for young start-ups to look for BAs that are able to include their industry experience to their plan of action. In other words: Young entrepreneurs should mainly evaluate BAs on their industry experience followed by other factors such as the actual amount invested and/or their educational background. As the analysis part of this thesis points out, all factors except industry experience

do not have significant impacts on the successfulness of start-ups. As it turns out, the education level of BAs, as well as their previously founded companies and the actual amount invested do not have a significant impact on the likelihood of helping start-ups to become successful. Especially the latter factor (amount invested) contradicts the theory of ownership that is mentioned in different previous studies by Pierce, Kostova, & Dirks (2003) and van Dyne & Pierce (2004). Even though one might expect the BA to invest more money in potentially more rewarding start-ups, there is not a significant relationship between those factors. Nevertheless, it has also be mentioned that it is not possible to see the relationship between BA and successful start-up as a one-way stream. Both the BA and the entrepreneur need to work together to create a successful new company. As a matter of fact, this two-way stream was not possible to research in this thesis. Nevertheless, it would be interesting for future research to focus on this relationship in order to understand better how high the real impact of BAs in young companies really is.

.

8.0 References

- Aernoudt, R. (2005). Business angels: The Smartest Money for Starters? Plea for a Renewed Policy Focus on Business Angels. *International Journal of Business*, 10(3), 271–284. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=778426
- Aram, J. D. (1989). Attitudes and behaviors of informal investors toward early-stage investments, technology-based ventures, and coinvestors. *Journal of Business Venturing*, 4(5), 333–347. doi:10.1016/0883-9026(89)90005-0
- Ardichvill, A., Cardozo, R., Tune, K., & Reinach, J. (2002). The role of angel investors in the assembly of non-financial resources of new ventures: Conceptual framework and empirical evidence. *Journal of Enterprising Culture*, 10(1), 39–65. Retrieved from <http://www.worldscientific.com/doi/pdf/10.1142/S021849580200013X>
- Arthur, C. (2013). Skype: has Microsoft's \$8.5bn spending paid off yet – and can it? Retrieved from <http://www.theguardian.com/technology/2013/aug/30/skype-microsoft-acquisition-analysis>
- Åstebro, T., & Bernhardt, I. (2003). Start-up financing, owner characteristics, and survival. *Journal of Economics and Business*, 55(4), 303–319. doi:10.1016/S0148-6195(03)00029-8
- Avdeitchikova, S., Landstrom, H., & Månsson, N. (2008). What do we mean when we talk about business angels?: Some reflections on definitions and sampling. *Venture Capital*, 10(4), 371–394. doi:10.1080/13691060802351214
- Brzozowska, K. (2008). Business Angels in Poland in Comparison to Informal Venture Capital Market in European Union. *Engineering Economics*, 57(2). doi:10.5755/j01.ee.57.2.11540
- Cassar, G. (2004). The financing of business start-ups. *Journal of Business Venturing*, 19(2), 261–283. doi:10.1016/S0883-9026(03)00029-6
- Clercq, D., & Dimov, D. (2008). Internal Knowledge Development and External Knowledge Access in Venture Capital Investment Performance. *Journal of Management Studies*, 45(3), 585–612. doi:10.1111/j.1467-6486.2007.00747.x
- Clercq, D., Fried, V., Lehtonen, O., & Sapienza, H. (2006). An Entrepreneur's Guide to the Venture Capital Galaxy. *Academy of Management*, 20(3), 90–112. Retrieved from <http://www.jstor.org/stable/4166254>
- Covert, A. (2014). Facebook buys WhatsApp for \$19 billion. Retrieved from <http://money.cnn.com/2014/02/19/technology/social/facebook-whatsapp/>

- Deakins, D., & Freel, M. S. (2009). *Entrepreneurship and small firms* (5th ed.). London: McGraw-Hill.
- Dimov, D. P., & Shepherd, D. A. (2005). Human capital theory and venture capital firms: Exploring “home runs” and “strike outs”. *Journal of Business Venturing*, 20(1), 1–21.
doi:10.1016/j.jbusvent.2003.12.007
- Fiegerman, S. (2014). Snapchat CEO Reveals Why He Rejected Facebook's \$3 Billion Offer. *Mashable*. Retrieved from <http://mashable.com/2014/01/06/snapchat-facebook-acquisition-2/#ozi0lBaXomq3>
- France Angels. (2004). Business Angel Survey 2003. *CDC PM*.
- Freear, J., Sohl, J., & Wetzel, W. (1994). Angels and non-angels: Are there differences? *Journal of Business Venturing*, 9(2), 109–123. doi:10.1016/0883-9026(94)90004-3
- Geher, G., & Hall, S. (2014). *Straightforward Statistics: Understanding the tools of research* (1st ed.). New York, NY: Oxford University Press.
- Guo, B., Lou, Y., & Pérez-Castrillo, D. (2015). Investment, Duration, and Exit Strategies for Corporate and Independent Venture Capital. *Journal of Economics & Management Strategy*, 24(2), 415–455. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/jems.12097/epdf>
- Iruarrizage, J. H., & Santos, M. S. (2013). The informal investment context: Specific issues concerned with business angels. *Investigaciones Regionales*, 26, 179–198. Retrieved from <http://www.aecr.org/images/ImatgesArticles/2013/10/9Hoyos.pdf>
- Karlan, D., & Valdivia, M. (2006). Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions. *Review of Economics and Statistics*, 93(2), 510–527. doi:10.1162/REST_a_00074
- Knyphausen-Aufseß, D., & Westphal, R. (2008). Do business angel networks deliver value to business angels? *Venture Capital*, 10(2), 149–169. doi:10.1080/13691060801946188
- Koller, T., Goedhart, M. H., Wessels, D., & Copeland, T. E. (2010). *Valuation: Measuring and managing the value of companies* (5th ed., University ed. / McKinsey & Company). Hoboken, N.J.: John Wiley & Sons.
- Laitinen, E. K. (1992). Prediction of failure of a newly founded firm. *Journal of Business Venturing*, 7(4), 323–340. doi:10.1016/0883-9026(92)90005-C

- Landström, H. (1995). A pilot study on the investment decision-making behavior of informal investors in Sweden. *Journal of Small Business Management*, 33(3), 67–76.
- Macht, S. A., & Robinson, J. (2009). Do business angels benefit their investee companies? *International Journal of Entrepreneurial Behavior & Research*, 15(2), 187–208. doi:10.1108/13552550910944575
- Madill, J., Haines, G., & Riding, A. (2005). The Role of Angels in Technology SMEs: A Link to Venture Capital. *Venture Capital*, 7(2), 107–129. doi:10.1080/1369106042000316341
- Mason, C., & Botelho, T. (2014). The 2014 survey of business angel investing in the UK: A changing marketplace. *University of Glasgow*, 1–22.
- Mason, C., & Harrison, R. (2008). Measuring business angel investment activity in the United Kingdom: A review of potential data sources. *Venture Capital*, 10(4), 309–330. doi:10.1080/13691060802380098
- Mason, C. M. (2006). Informal Sources of Venture Finance, 3, 259–299. doi:10.1007/978-0-387-32313-8_10
- May, J., & Simmons, C. (2001). *Every business needs an angel: Getting the money you need to make your business grow*. New York, NY: Crown Business.
- Organisation for Economic Co-operation and Development. (2011). *Financing high-growth firms: The role of angel investors*. Paris: OECD.
- Pallant, J. (2013). *SPSS Survival Manual: A step by step guide to data analysis using IBM SPSS* (5th ed.): McGrawHill Education.
- Partel, N. (2015). 90% Of Startups Fail: Here's What You Need To Know About The 10%. *Forbes*. Retrieved from <http://www.forbes.com/sites/neilpatel/2015/01/16/90-of-startups-will-fail-heres-what-you-need-to-know-about-the-10/#50f9021655e1>
- Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology*, 7(1), 84–107. doi:10.1037/1089-2680.7.1.84
- Politis, D. (2008). Business angels and value added: What do we know and where do we go? *Venture Capital*, 10(2), 127–147. doi:10.1080/13691060801946147

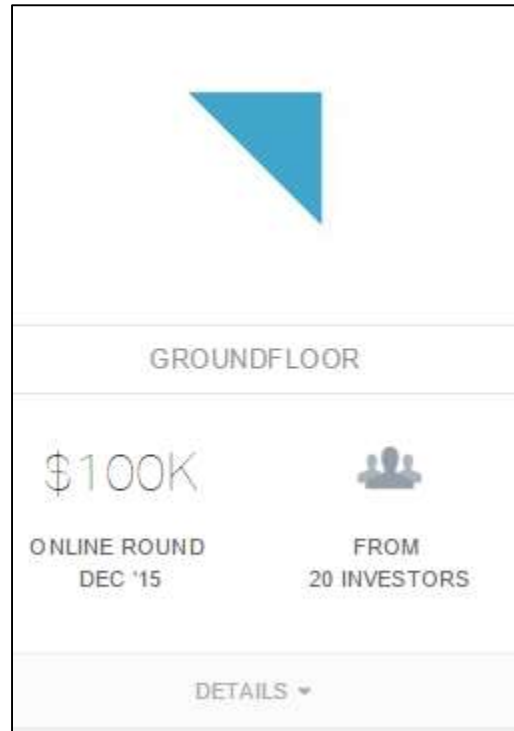
- Preston, S. L. (2004). *A guidebook to developing the right angel organization for your community*. Kansas City: Kauffman Foundation. Retrieved from http://www.angelcapitalassociation.org/data/Documents/Resources/AngelCapitalEducation/Kauffman_-_StartGroup_Guidebook.pdf
- Prowse, S. (1998). Angel investors and the market for angel investments. *Journal of Banking & Finance*, 22(6-8), 785–792. doi:10.1016/S0378-4266(98)00044-2
- Robb, A. M., & Robinson, D. T. (2012). The Capital Structure Decisions of New Firms. *Review of Financial Studies*, 27(1), 153–179. doi:10.1093/rfs/hhs072
- Robinson, P. B., & Sexton, E. A. (1994). The effect of education and experience on self-employment success. *Journal of Business Venturing*, 9(2), 141–156. doi:10.1016/0883-9026(94)90006-X
- Salkind, N. J. (2011). *Statistics for people who (think they) hate statistics* (4th ed.): SAGE.
- Shane, S. A. (2005). Angel Investing: A Report Prepared for the Federal Reserve Banks of Atlanta, Cleveland, Kansas City, Philadelphia and Richmond. *SSRN Electronic Journal*, 1–42. doi:10.2139/ssrn.1142687
- Shane, S. A. (2008). The Importance of Angel Investing in Financing the Growth of Entrepreneurial Ventures: A working paper. *Quarterly Journal of Finance*, 2(2), 1–47. doi:10.1142/S2010139212500097
- Smith, J., Smith, R., & Bliss, R. (2011). *Entrepreneurial finance: Strategy, Valuation, and Deal Structure*: Stanford University Press.
- Spence, A. (1981). The Learning Curve and Competition. *The Bell Journal of Economics*, 12(1), 49. doi:10.2307/3003508
- Stevenson, H., & Coveney, P. (1994). Survey of business angels: Fallacies corrected and six distinct types of angel identified. *National small firms policy and research conference*.
- Sullivan, M. K., & Miller, A. (1996). Segmenting the informal venture capital market: Economic, hedonistic, and altruistic investors. *Journal of Business Research*, 36(1), 25–35. doi:10.1016/0148-2963(95)00160-3
- van Dyne, L., & Pierce, J. L. (2004). Psychological ownership and feelings of possession: three field studies predicting employee attitudes and organizational citizenship behavior. *Journal of Organizational Behavior*, 25. doi:10.1002/job.249

- van Praag, C. M., & Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29(4), 351–382. doi:10.1007/s11187-007-9074-x
- Wadhwa, V., Freeman, R., & Rissing, B. (2010). Education and Tech Entrepreneurship. *Innovations: Technology, Governance, Globalization*, 5(2), 141–153. doi:10.1162/inov_a_00018
- Wetzel, W. (1983). Angels and informal risk capital, 24(4), 23–34. Retrieved from <https://www.uzh.ch/iou/orga/ssl-dir/wiki/uploads/Main/v31.pdf>
- Wiltbank, R. & Boeker, W. (2007). Angel Investor Performance Project. Retrieved from <http://sites.kauffman.org/aipp/>
- Zarutskie, R. (2010). The role of top management team human capital in venture capital markets: Evidence from first-time funds. *Journal of Business Venturing*, 25(1), 155–172. doi:10.1016/j.jbusvent.2008.05.008
- Zillman, C. (2016). Facebook Is Now More Valuable Than Exxon. *Fortune*. Retrieved from <http://fortune.com/2016/02/01/facebook-value-exxon/>

9.0 Appendix

Appendix I

Screenshot of a \$100'000 fundraising campaign with 20investors @\$5'000 each.



Appendix II – The original AIPP survey

All questions in this section refer to your actions as an individual angel investor.

- Years you've been investing your own capital in new businesses
- Number of new business investments you've made
- Number of these new business investments from which you've exited (include closures) Required
- Your years of experience working in new businesses
- Number of new businesses for which you've been a founding member of the leadership team
- Your years of experience working in large corporations (500+ people)
- Please name the angel groups with which you are affiliated. Required
- Year of birth
- Your highest level of education: Required
- In what field?
- Gender
- % of your wealth that you have invested directly in new businesses

The following questions ask about each new business investment from which you've exited, one company at a time. Please complete the question sets starting with your most recent exited investment proceeding to your least recent exited investment.

- Business name
- Business headquarters location
- Business's primary industry of operation
- Your prior years of experience in that industry
- Stage of firm when you made your initial investment

Source of the deal (check all that apply)

- From your angel group's initial screening efforts ☐
- From your angel group's main investment presentations ☐
- You were personal friends with the entrepreneur/s ☐
- You had worked with the entrepreneur/s previously ☐
- The entrepreneur/s were referred to you by friends ☐
- The entrepreneur/s were referred to you by business contacts ☐
- Other

Select the top 3 risks / challenges facing this business at the time you initially invested (no more than 3)

- Technology still developing ☐
- Operational issues with volume ☐
- High customer concentration ☐
- Fragmented customer base ☐
- Challenging marketing channel ☐
- Competitive threats ☐
- Required a lot of capital ☐
- Management team issues ☐
- Regulatory issues ☐

Identify your role with the business (check all that apply)

- Served on board ☐
- Served as board observer ☐
- Lead investor ☐
- Represented your angel group in the deal ☐
- A "sounding board" for the entrepreneur ☐
- Took a management position ☐
- Paid consultant ☐
- Informal but active ☐
- Substantially passive ☐

Your most recent exited investment. This set of questions concerns your investment activity with the business identified on the previous screen. Include only cash investment, not 'sweat equity'.

- Year of initial investment
- Initial \$ amount invested
- % of the business owned as a result of your initial investment
- Details of your first follow-on investment, if any Year 20 \$ 21 % of business owned after follow-on investment 22
- Details of your second follow-on investment, if any Year 23 \$ 24 % of business owned after follow-on investment 25
- Total of any other follow-on \$'s YOU invested
- Prior 12 month revenues of this business when you made your initial investment Select from these ranges
- Prior 12 month profitability of this business when you made your initial investment Select from these ranges
- Number of other members of your group that invested with you at your initial investment
- Number of hours of due diligence you did before investing

Management team experience at your initial investment (check all that apply)

- Founded and led other new ventures ☐
- Other new ventures had succeeded ☐
- Significant large firm experience ☐
- Significant technical experience ☐
- Significant managerial experience ☐
- Significant sales/marketing experience ☐
- I don't know ☐
- Number of people on the founding team for this business
- Number of those founding team members still actively involved at the time of the exit
- Number of outside board members at exit (non managers, non friends/family)
- Total number of board of directors at exit

Would you say the entrepreneurs leading this venture:

67. Tried to directly influence how important factors in the market develop

68. Tried to position the venture to benefit from expectations of a large and growing market

Would you say that the entrepreneurs in this venture emphasized:

69. Acquiring the means needed in order to reach their existing goals

70. Utilizing current means and capabilities to flexibly pursue new goals

Would you say that the entrepreneurs in this venture typically prioritized:

71. Making smaller investments focused on getting quickly to positive cash flow

72. Making larger investments, staying on plan, even if it delayed positive cash flow

Disagree ---Neutral --- Agree

Disagree ---Neutral --- Agree

Disagree ---Neutral --- Agree

73. Year of exit event

74. Type of exit event

75. Ownership % at exit event

76. Total cash distributions paid to you during investment period

77. Total cash value paid to you as a result of the exit

78. Total valuation of the firm at exit

79. Your remaining ownership % after the exit event, if any

80. Prior 12 month revenues of the business when the exit event occurred

81. Prior 12 month profitability of the business when the exit event occurred

82. Total amount of formal venture capital the business took on prior to your exit

83. Frequency of interaction with the business

Instructions:

You have completed questions concerning your investment in this company. If you need to edit any information entered for this business, click on the appropriate button in the "Steps" bar at the top of the page.

To save your responses and advance to the next exit, click on the "Done with this company" button at the top of the page.

Appendix III – Statistical Output

Logistic Regression

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	137	96,5
	Missing Cases	5	3,5
	Total	142	100,0
Unselected Cases		0	,0
Total		142	100,0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
0	0
1	1

Block 0: Beginning Block

Classification Table^{a,b}

Observed		Predicted		
		coded_exit		Percentage Correct
		0	1	
Step 0	coded_exit 0	0	52	,0
	1	0	85	100,0
Overall Percentage				62,0

a. Constant is included in the model.

b. The cut value is ,500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	,491	,176	7,791	1	,005	1,635

Variables not in the Equation^a

	Score	df	Sig.
Step 0 Variables coded_edu	,034	1	,853
industryexp	5,209	1	,022
numfounded	,474	1	,491
initialinvest	,375	1	,540

a. Residual Chi-Squares are not computed because of redundancies.

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	6,273	4	,180
	Block	6,273	4	,180
	Model	6,273	4	,180

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	175,622 ^a	,045	,061

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than ,001.

Classification Table^a

Observed		Predicted		
		coded_exit		Percentage Correct
		0	1	
Step 1	coded_exit 0	0	52	,0
	1	0	85	100,0
Overall Percentage				62,0

a. The cut value is ,500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	coded_edu	-,018	,131	,019	1	,891	,982	,760	1,269
	industryexp	,046	,021	4,699	1	,030	1,047	1,004	1,091
	numfounded	,017	,057	,093	1	,760	1,017	,911	1,137
	initialinvest	,000	,000	,359	1	,549	1,000	1,000	1,000
	Constant	,144	,491	,086	1	,769	1,155		

a. Variable(s) entered on step 1: coded_edu, industryexp, numfounded, initialinvest.